

SOV/135-59-10-7/23

Heating and Cooling Studs During Buttwelding by Friction

For calculation of the heating process, the following assumptions are made: The power of the rotation source, q cal/sec, is considered as constant during the heating time. The thermophysical coefficients of the material of both studs - heat conductivity λ cal/cm.sec $^{\circ}\text{C}$, temperature conductivity a cm^2/sec , and thermal capacity c cal/cm 3 $^{\circ}\text{C}$ - are considered as not depending on the temperature, and their mean value within the examined temperature interval. Concerning the influence of surface heat elimination of the studs, these are considered as unlimited in length. The initial temperature is considered as zero (Celsius). The abscissa is put on the axis of the studs so that the sections at the ends form the ordinata. Time t is counted from the beginning of heating. Then the temperature $T(x, t)$ of the studs is expressed by a proportion (N.N. Rykalin, Raschety teplovykh protsessov pri svarke (Calculations of Thermal Processes when Welding), Mashgiz, 1951). The integral in this case is expressed by the function

$$\text{ierfc } u = \int_u^{\infty} \text{erfc } u du = \frac{1}{\sqrt{\pi}} \exp(-u^2) - u \text{erfc } u; \text{ decreasing}$$

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on the positive axis from the value $\pi^{-\frac{1}{2}} = 0.5642$ at $u = 0$ to zero at $u = \infty$ (Fig.4):

$$T(x,t) = \frac{q_2 \sqrt{t}}{\sqrt{\lambda c \gamma}} \operatorname{ierfc} \frac{x}{2 \sqrt{at}} . \quad (6)$$

The temperature of the contact section ($T(0,t)$) is expressed by

$$\text{the first factor of equation 6: } T(0,t) = \frac{q_2 \sqrt{t}}{\sqrt{\pi \lambda c \gamma}} , \quad (7)$$

The temperature in the state of equalization at the end of heating during the time t_k is calculated using equation 9:

$$T(x,t) = T(x,t) - T(x,t-t_k); t \geq t_k . \quad (9)$$

For the contact section, the temperature in the process of equalization is expressed by equation 10:

$$T(0,t) = \frac{q_2}{\sqrt{\pi \lambda c \gamma}} (\sqrt{t} - \sqrt{t-t_k}); t \geq t_k . \quad (10)$$

The temperature of the contact sections in the state of heating and in the state of cooling through a low heating temperature T_k

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Heating and Cooling Studs During Buttwelding by Friction

and its duration t_k is expressed with the help of equations 7 and 10 (Fig.8). In the state of heating: $\frac{T(t)}{T_k} = \sqrt{\frac{t}{t_k}}; t \leq t_k$. (11)

In the state of cooling: $\frac{T(t)}{T_k} = \sqrt{\frac{t}{t_k}} - \sqrt{\frac{t}{t_k}} - 1; t \geq t_k$. (12)

By introduction of the factor θ (the proportion between T_k & T_n) equation 15 is given for the speed of cooling $w^\circ\text{C/sec}$:

$$w(T) = \frac{T_k}{t_k} \cdot \frac{2\theta^3}{1-\theta^4}, \text{ (15), by equation 13}$$

and 14 (Fig.9). There are 1 diagram and 8 graphs.

ASSOCIATION: Institut metallurgii imeni A.A. Baykova AN SSSR (Metallurgical Institute imeni A.A. Baykov, AS USSR)

Card 4/4

PUGIN, A.I., kand.tekhn.nauk; VASIL'YEVA, V.A., kand.tekhn.nauk

Heating of disk billets for rolling spherical bottoms of tanks. Vest.
mashinostr. 43 no.11:70-74 N '63. (MIRA 17:2)

PUGIN, A.I.

Heating and cooling titanium alloy rods in resistance flash
welding. Avtom. svar. 16 no.11:17-24 N '63. (MIRA 17:1)

1. Institut metallurgii imeni A.A. Baykova.

PUGIN, A. I. (Candidate of Technical Sciences) (IMET)

"The approximate calculation of the thermal cycle of the seam zone during electro-slag weldings of great thickness, permitting the checking of selected technological welding processes."

(Report presented at the regular conference of the Moscow city administration NTO Mashprom, April 1963.

(Reported in Avtomaticheskaya Svarka, No. 8, August 1963, pp 93-95, M. M. Popekhin)

JPRS24,651 - 19 May 64

BLECHA, A.; PULPAN, J.

Extermination of mites on stored sugar beet seeds. Listy
cukrovar 80 no.5:105-110 My '64.

1. Central Research Institute of Food Industry, Prague.

POLYAKOV, A. N.

"Sravnitel'naya kharakteristika neskol'kikh iskhodnykh i migriruyemykh
grupp naseleniya."

report submitted for 7th Intl Cong, Anthropological & Ethnological Sciences,
Moscow, 3-10 Aug 64.

PUGIN, A.I.; PERTSOVSKIY, G.A. (Leningrad)

Calculating the heat cycle of a weld zone during the electric
slag welding of thick steel. Avtom. svar. 16 no.6:14-23 Je
'63. (MIRA 16:7)

1. Institut metallurgii im. A.A.Baykova (for Pugin).
(Plates, Iron and steel--Welding)
(Electric welding)

BRYLEYEV, A.M., prof., doktor tekhn.nauk; DMITRENKO, I.Ye., inzh.; PUGIN,
D.K., kand.tekhn.nauk

Automatic train traffic control system with the use of radio channels.
Zhel.dor.transp. 45 no.7:37-40 J1 '63. (MIRA 16:9)
(Railroads—Automatic train control)
(Railroads—Electronic equipment)

BRYLEYEV, A.M., doktor tekhn.nauk, prof.; SHISHLYAKOV, A.V., kand.tekhn.
nauk; PUGIN, D.K., kand.tekhn.nauk; YEFIMOV, G.K., inzh.;
MOZHAYEV, S.S., inzh.; GRIGOR'YEV, N.I., inzh., retsenzent;
KAZAKOV, A.A., kand.tekhn.nauk, retsenzent; PETUSHKOVA, I.K.,
inzh., red.; USENKO, L.A., tekhn.red.

[New systems of coded automatic block signaling] Novye sistemy
kodovoi avtoblokirovki. Moskva, Vses. izdatel'sko-poligr.
ob"edinenie M-va putei soob., 1961. 135 p. (Moscow. Vsesoiuznyi
nauchno-issledovatel'skii institut zheleznodorozhnogo transporta.
Trudy, no.219) (MIRA 15:1)
(Railroads--Signaling--Block system)

BRYLEYEV, A.M., doktor tekhn.nauk, prof.; USTINSKIY, A.A., kand.tekhn.nauk;
PUGIN, D.K., kand.tekhn.nauk; KHUDOV, V.N., inzh.

Use of radio channels in the automatic traffic control systems for
railroad sections. Vest.TSNII MPS 18 no.8:9-14 D '59.

(MIRA 13:9)

(Railroads--Automatic train control)

(Railroads--Communication systems)

32 (3)

SOV/112-57-5-10946

Translation from: Referativnyy zhurnal. Elektrotehnika, 1957, Nr 5, p 198 (USSR)

AUTHOR: Vakhnin, M. I., Penkin, N. F., Pokrovskiy, M. A., Pugin, D. K.,
Talykov, A. A.

TITLE: Railroad Signaling Equipment with AC Traction System
(Ustroystvo STsB pri elektricheskoy tyage peremennogo toka)

PERIODICAL: Tr. Vses. n.-i. in-ta inzh. zh.-d. transpr., 1956, Nr 126,
p 220, ill.

ABSTRACT: Bibliographic entry.

Card 1/1

BRYLEYEV, A.M., doktor tekhn.nauk, prof.; PUGIN, D.K., kand.tekhn.nauk;
YEFIMOV, G.K., inzh.

Coded a.c. circuit blocking with time division of coding in the
adjacent track cuicuits. Vest.TSNII MPS 20 no.5:3-8 '61.
(MIRA 14:8)

(Railroads--Signaling--Block system)

BRYLEYEV, Arkadiy Mikhaylovich, doktor tekhn. nauk, prof.; PENKIN, Nikolay Fedorovich, kand. tekhn. nauk; PUGIN, Daniil Kalistratovich, kand. tekhn. nauk; SHARIKOV, Vladimir Alekseyevich, inzh. Prinima uchastiye DMITRENKO, I.Ye., inzh.; SHIROKSHIN, K.A., inzh., retsen-zent; MARENKOVA, G.I., inzh., red.; NOVIKAS, M.N., inzh., red. USENKO, L.A., tekhn. red.

[Transistorized and magnetic noncontact devices of centralized traffic control systems] Poluprovodnikovye i magnitnye beskontakt-nye pribory v ustroistvakh STsB. [By] A.M.Bryleev i dr. Moskva, Transzheldorizdat, 1962. 230 p. (MIRA 15:5)

(Railroads--Electronic equipment)
(Railroads--Signaling--Centralized traffic control)

BRYLEYEV, A.M., doktor tekhn. nauk, prof.; PUGIN, D.K., kand. tekhn. nauk; DMITRENKO, I.Ye., inzh.

Station apparatus of a system for automatic space interval control of train traffic using radio channels. Trudv MIIT no.170:5-18 '63.

Tracking device of a system for automatic space interval control of train traffic using radio channels. Ibid.:57-70 (MIRA 17:6)

PUGIN, K.M., (s. Krasnozerskoye Novosibirskogo kraia)

Expression under mixed procaine and penicillin anesthesia.
Vest. oft. 69 no.1:36-37 Ja-F '56. (MLRA 9:5)

(TRACHOMA, surg.
expression, with procaine anesth. with penicillin)
(PROCAINE, anesth. and analgesia
in expression in trachoma, with penicillin)
(PENICILLIN, ther. use
in procaine anesth. during expression in trachoma)

PUGIN, K.S., inzh.

Burying main gas lines. Stroi.truboprov. 4 no.1:14-15 Ja '59.
(MIRA 12:1)

(Gas, Natural--Pipelines)

PUGIN, M. V.

"Treatment of Infectious Encephalomyelitis in Horses."

Veterinarian, Kanash State Farm, Kuybyshev Oblast.

PUGIN, A. A. and REKHTZAMER, G. R.

"Research of Wave Movement on Seas, Lakes and Reservoirs with Stereo-Photography"
Publishing House for Hydro-Meteorology, Leningrad 1955.

PUGIN, M. V.

"Treatment of Infectious Encephalomyelitis in Horses."

SO: Veterinariya 25, No. 2, 14 (1948) Unclassified.

Vet. Dr. Krasnaya State Farm, Kuybyshev Oblast'

(A) L 27454-66 EWT(m)/EWP(j)/T RM
 ACC NR: AP5021520 SOURCE CODE: UR/0113/65/000/008/0032/0033
 AUTHOR: Bocharov, N. F. (Candidate of technical sciences); Filyushkin, A. V. (Candidate of technical sciences); Semenov, V. M. (Candidate of technical sciences); Pugin, P. P.
 ORG: MVTU im. Bauman; NAMI
 TITLE: Tests of tires with a different number of cord layers
 SOURCE: Avtomobil'naya promyshlennost', no. 8, 1965, 32-33
 TOPIC TAGS: motor vehicle, vehicle tire, wear material, friction, test, test method, elasticity
 ABSTRACT: In 1963 the MVТУ im. Bauman carried out tests of 4-, 6-, 8-, and 10-ply OI-25 tires (size: 14.00-20) mounted on an Ural-375 automobile. To test the tires as simple drive units, the front and middle drives (6 x 2 tire arrangement) were disconnected. The tensiometric device consisted of an N-700 oscillograph, 8 ANCh-7M amplifier, and a PPT-100 semiconductor converter. The experiments recorded the driving torque on the wheels, the number of engine revolutions, stresses on the driving axle, the turns of the auxiliary (dynamometric) wheel, and the weight on the tires. Tests showed that peripheral and radial tire elasticity is substantially affected by the number of plies, air pressure, and the vertical load. Both types of elasticity influence to a considerable degree the rolling friction while moving on a firm road. The peripheral tire elasticity influences in an essential manner the nonuniform distribution of torques over the driving axles of automobiles with blocked power gear. Orig. art. has: 4 formulas and 4 figures.
 Card 1/2 UDC: 629.11.012.5.001.5

L 27454-66

ACC NR: AP5021520

SUB CODE: 13,20 SUBM DATE: none / ORIG REF: 005

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Card 2/2

20

BOCHAROV, N.F., kand. tekhn. nauk; FITYUSHKIN, A.V., kand. tekhn. nauk;
SEменов, V.M., kand. tekhn. nauk; PUGIN, P.P.

Testing tires with variable cord lays. Avt. prom. 31 no.2:32-33
Ag '65. (MIRA 18:8)

1. Moskovskoye vyssheye tekhnicheskoye uchilishche imeni
Baumana i Tsentral'nyy nauchno-issledovatel'skiy ordena
Trudovogo Krasnogo Znameni avtomobil'nyy i avtomotornyy
institut.

ACC NR: AP6016319

(A)

SOURCE CODE: UR/0113/66/000/001/0014/0017

AUTHOR: Filyushkin, A. V. (Candidate of technical sciences); Bocharov, N. F. (Candidate of technical sciences); Semenov, V. M. (Candidate of technical sciences); Pugin, P. P.

ORG: MVTU imeni Bauman; NAMI

TITLE: The effect of kinematic chain arrangement in three-axle automotive vehicles on fuel consumption with respect to motion along a solid support surface

SOURCE: 'Avtomobil'naya promyshlennost', no. 1, 1966, 14-17

TOPIC TAGS: vehicle power transmission system, drive train, cargo truck, fuel consumption, highway vehicle data, automotive industry

ABSTRACT: The authors study the effect which the kinematic chain arrangement in three-axle automotive vehicles has on fuel consumption. Six types of kinematic arrangements are studied: 1. 6x6 with interlocked drive; 2. 6x6 with a differential drive; 3. 6x4 with an interlocked drive between the axle assemblies of the frame; 4. 6x4 with a differential drive between the frame axle arrangements; 5. 6x6 with a differential drive between the axle assemblies of the frame and interlocking drive to the front axle assembly; 6. 6x6 with an interlocked drive between the axle assemblies of the frame and a differential drive to the front axle assembly. Data are given from re-

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UDC: 629.115.3.001.5

SIC 1478

KHITAROV, N.I.; PUGIN, V.A.

Relationship between the pressure and the temperature of the initial
melting of sandy-shale formations. Geokhimiia no.4:300-303 '62.
(MIRA 16:7)

1. Vernadsky Institute of Geochemistry and Analytical Chemistry
Academy of Sciences, U.S.S.R., Moscow.
(Shale--Thermal properties) (Sand--Thermal properties)

BERENIN, V.I.; PUGIN, V.A.; PAL'KO, G.S.

Deformation and stresses in the rubber coating of the side strips
of type "P" tires. Kauch. i rez. 24, no.7:15-17 71 '65.

(MIRA 18:8)

1. Nauchno-issledovatel'skiy institut shinnoy promyshlennosti.

AUTHORS:

Biderman, V. L., Pugin, V. A.

TITLE:

A Wire Gauge for the Measuring of Substantial Deformations
(Provolochnyy datchik dlya izmereniya bol'shikh deformatsiy)

PERIODICAL:

Zavodskaya Laboratoriya, 1958, Vol. 24, Nr 7, pp. 874 - 875
(USSR)

ABSTRACT:

The usual wire-resistance gauges make possible measurements of deformations up to 1 - 2%, while for measurements of greater plastic deformations of non-metallic materials amounting to several ten percents a special gauge is described in the present paper. It consists of a rubber piece of a diameter of 1-1,5 mm, onto which a thin constantan wire is wound, with a rubber being extended while the wire is being wound onto it; thus, the wire is stretched. This gauge is then stuck to the test piece to be investigated in the direction of the deformation to be measured; thus, it is deformed simultaneously. Hence the electric resistance of the wire changes, which then is measured. This device makes it possible to measure deformations of up to $\pm 15\%$, with the sensitivity depending on the method of production of the gauge. The tests carried out with the rubber and canvas of pneumatic tires showed that the gauges have a high mechanical

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SOV/32-24-7-41 '65
A Wire Gauge for the Measuring of Substantial Deformations
resistance and can be used several times. There is 1 figure.
ASSOCIATION: Nauchno-issledovatel'skiy institut shinnoy promyshlennosti
(Scientific Research Institute of Tire Industry)

Card 2/2

S/572/60/000/006/018/018
D224/D304

AUTHORS: Biderman, V. L., Doctor of Technical Sciences, and Pu-
gin, V. A., Engineer

TITLE: Experimental investigation of deformation in car tires

SOURCE: Raschety na prochnost'; teoreticheskiye i eksperimen-
tal'nyye issledovaniya prochnosti mashinostroitel'nykh
konstruktsiy. Sbornik statey. No. 6, Moscow, 1960,
295-313

TEXT: The authors describe methods for measuring deformations in rubber cord car tires, using specially developed detectors and give graphs of distribution of deformations in tires obtained experimentally both in laboratory and in service conditions on the roads. The required range of deformations to be measured is approximately 0.1 to 25% with an accuracy up to 0.1%. Two types of tensometers were used. A Π -shaped bracket tensometer of thin steel with ordinary wire transmitters fixed on both sides is used only for measurements in static conditions. Later, transmitters were developed

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Experimental investigation of ...

S/572/60/000/006/018/018
D224/D304

which consist of rubber thread about 1 mm in diameter with a constant wire winding. The characteristics of these are generally non-linear. A formula for their sensitivity is given and the method of their calibration described. The following subjects are treated: Deformations of rubber, deformations of cord threads, effects of concentrated forces, effects of internal pressure and static loads, investigation of deformations on the road. The authors state that the results obtained on the road must be taken into account when developing methods of laboratory tests. There are 23 figures and 6 references: 4 Soviet-bloc and 2 non-Soviet-bloc. The reference to the English-language publication reads as follows: D. Loughborough, V. Davies and G. Monfort, Canadian Journal of Research, 1950, 28, Sect. F. ✓

Card 2/2

BIDERMAN, V.L., doktor tekhn.nauk; PUGIN, V.A., inzh.

Experimental investigation of deformations in motor-vehicles
tires. Rasch.na prochn. no.6:295-313 '60. (MIRA 14:1)
(Motor vehicles--Tires--Testing)

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SOV/81-59-5-17733


15.9300

Translation from: Referativnyy zhurnal, Khimiya, 1959, Nr 5, pp 560 - 561
(USSR)

AUTHORS: Biderman, V.L., Drozhzhin, P.Kh., Pugin, V.A., Shchavaleva, V.F.

TITLE: The Experimental Investigation of Deformations Occurring in Parts
of the Tread in a Pneumatic Tire 15

PERIODICAL: Tr. N.-1, in-ta shin. prom.-sti, 1957, Nr 3, pp 5 - 15

ABSTRACT: A method is described for measuring the deformations (D) occurring in parts of the tire (T) and some of the results of a study of D in the internal and external layers of the tread are submitted, depending on the factors of its construction and its operation conditions. The measuring of D is performed with a tensometer, which is a thin steel  -shaped cramp; wire transducers are pasted onto the horizontal plate from both sides. The fastening and insertion of the tensometer into the tread part, which is being measured, is accomplished by means of needles soldered onto the cramp with rubber disks, vulcanized onto it. A holder is also soldered onto the cramp for fastening the transducer

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The Experimental Investigation of Deformations Occurring in Parts of the Tread in a Pneumatic Tire

onto the tread. The transducer is fed by a direct current. The electrical signal from the tensometer is amplified and fed to an oscillograph. In order to get a horizontal deflection of the beam of the latter a special scanning device is installed, which is a potentiometer, the brush of which rotates together with the tire, whereby the deflection of the beam of the oscillograph is proportional to the angle of T rotation. D was measured at various velocities of the rolling up to 50 - 60 km/hr. When the tread is rolling along a smooth surface the zone of the D elements of T spreads to 1/3 of the T circumference. The curves of change of the meridional (profile) and circumferential D, in the internal as well as the external layers of the tread, have the shape of three extrema, in which case the circumferential and meridional D have different signs in all the points. In the meridional direction the maximum D take place at a distance of 110 - 120 mm from the crown and at the same distance in the circumferential direction, whereby the value of D reaches 5 - 6%. The threads of the cord near the crown are subjected to D of stretching. The value of D of the threads is 1.0 - 1.5% above the initial

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The Experimental Investigation of Deformations Occurring in Parts of the Tread in a Pneumatic Tire

lengthening (2%), which depends on the internal pressure in T. On the side part the threads operate under compression, the greatest D (1.8 - 2.2%) of which occur in the cross-section located at 110 - 120 mm from the crown. D of the rubber in the layer (30 - 40%) are mainly shear D. Additional dynamic D of the threads of the cord along the crown practically do not depend on the internal pressure. Compression D of the threads on the side within a pressure range of 2 - 5 kg/cm² do not depend either on the internal pressure. With a drop in the pressure to < 2 kg/cm² the compression D increase. At a constant deflection the D of the rubber in the layer actually do not change due to internal pressure. The cord D along the crown do not depend on the deflection of T when the latter changes from 10 - 40 mm. With an increase in the deflection the compression D of the threads on the side increase. The shear D of the rubber in the layer also increase with an increase in the deflection. A change in the rolling velocity of T from 3 to 50 km/hr has no significant effect on the rubber and cord D. Pressing obstacles into T, D of the threads increase approximately in proportion to

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The Experimental Investigation of Deformation Occurring in Parts of the Tread in a Pneumatic Tire

the magnitude of the impression and decrease with a drop of the internal pressure in T. With an increase in the number of layers of T, the thread and rubber D in the layers increase. A change in the cut angle of the chord threads (42, 52, 60°) has little effect on the cord thread D. When a concentrated load acts on T, an increase in the angle of the thread causes some increase in their D. With an increase in the thread angle from 42 to 60° the rigidity of the carcass in the circumferential direction increases, and in the meridional direction decreases, whereby the D of the layers in the circumferential direction decrease by 25 - 30%, and in the meridional direction increase by 40 - 50%. With an increase in the rigidity of the chord, the thread D decrease. The conditions of the cord D during rolling of T are close to the given conditions of the D cycle work. The shear D of the rubber in the layers do not depend on the type of the chord. When a concentrated load acts, the thread D in the tread made of hard rubber is greater than in soft one. The type of the profile and its depth have no

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The Experimental Investigation of Deformation Occurring in Parts of the
Tread in a Pneumatic Tire

significant effect on the cord and rubber D when T rolls along a smooth path.
When a concentrated load acts upon T, the profile type, its depths and the
thickness of the sub-groove layer have an effect on the cord thread D.

M. Khromov

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S/138/60/000/01/05/010

AUTHOR: Pugin, V.A.TITLE: Electric Tensimeters for Measuring Great Deformations ¹⁶

PERIODICAL: Kauchuk i Rezina, 1960, No. 1, pp. 24 - 27

TEXT: The calculation of tensions and deformations occurring in rolling automobile tires is not always possible on account of the complexity of the configuration of the article. NIISHP has developed a tensimeter for measuring the deformation of the composing elements of a tire, which has to satisfy the following requirements: It must be capable of measuring deformations within a range of 0.2-20%; it must be flexible in order not to impair the nature of deformation; fixing must be simple and reliable; it must record changes in linear dimensions in the direction of the deformation to be measured and not react to the change of the curvature of the tire tread; it must be sensitive and show stable recordings. The tensimeter, as shown in Diagram 1, consists of a 3x3 mm core with a winding of 0.05-0.06 copper wire and an armature attached to the core by means of a soft spring; the two jaws are fitted with rubber pads and needles, between which the distance is 10-12 mm. During deformation of the part on which the tensimeter is installed,

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Electric Tensometers for Measuring Great Deformations

the clearance between armature and core changes, which changes the induction resistance alters the current passing through the winding. Tensometers with wire transducers for measuring great deformations, as shown in Diagram 2, have the shape of a bracket, at the two ends of which the same kind of needles and rubber pads are fitted. Any deformation causes the bracket to bend. This flexion is recorded by the wire transducers attached to the shoulders of the tensometer. When measuring deformations with an accuracy of up to 10^{-5} the apparatus makes it possible to measure deformations of up to 30%. Diagram 4 shows the design of a rubber-wire transducer which is most suitable for measuring deformations under dynamic conditions. The device consists of a 1 mm rubber lace on which a 0.02 mm constantan wire is wound, after the lace has been stretched to about twice its normal length. When the lace is released, the wire is under stress. The tensometer is stuck on the article to be tested in the direction of the deformation and is therefore liable to take on the same deformation. The ensuing change in the tension of the wire brings about a change in the electric resistance. A formula derived by the author shows that the characteristic of the transducer is not linear, for practical purposes, however, the sensitivity of the transducer can be taken as being constant. Experiments

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Electric Tensimeters for Measuring Great Deformations

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proved that within the range of frequencies from 2 to 50 cycles the sensitivity of the transducer does practically not depend on the frequency of deformation. The article gives the following technical characteristics concerning rubber-wire transducers suitable for measuring deformation in automobile tires: diameter of rubber lace 0.9-1.0 mm, pitch of winding 0.5 mm, diameter of wire 0.02 mm, resistance of transducer 200 ohms, material of wire - constantan, material of lace - natural rubber. There are 1 photo, 3 diagrams, 3 graphs and 1 Soviet reference. ↙

ASSOCIATION: Nauchno-issledovatel'skiy institut shinnoy promyshlennosti (Scientific Research Institute of the Tire Industry)

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Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 10, p 150 (USSR) SOV/124-58-10-11822

AUTHORS: Biderman, V. L., Drozhzhin, P. Kh., Pugir, V. A., Shchavaleva, V. F.

TITLE: Experimental Investigation of the Deformations of Elements of a Pneumatic-tire Body (Eksperimental'noye issledovaniye deformatsiy elementov pokryshki pnevmaticheskoy shiny)

PERIODICAL: Tr. N. i. i. ta shin. prom-sti, 1957, Nr 3, pp 3-15

ABSTRACT: A brief description of a method for measuring the deformations of elements of a tire and presentation of some results of an investigation of the relationship between the deformations of the inner and outer layers of the tire body and a number of design and operational factors.

Reviewer's name not given

Card 1/1

BIDERMAN, V.L.; FUGIN, V.A.; FIL'KO, G.S.

Fatigue endurance characteristics of the rubber-cord tire structure. Kauch. i rez. 24 no.12:29-31 '65.

(MLRA 18:12)

1. Nauchno-issledovatel'skiy institut shinnoy promyshlennosti.

BIDERMAN, V.L.; PUGIN, V.A.

Wire resistance gauge for measuring large deformations. Zav. lab.
24 no. 7:874-875 '58. (MIRA 11:7)

1. Nauchno-issledovatel'skiy institut shinnoy promyshlennosti.
(Transducers)
(Deformations (Mechanics))


S/137/62/000/001/051/237
A060/A101

AUTHORS: Pugina, L. I., Romanov, V. V.

TITLE: Corrosion of iron-base metallo-ceramic materials in a 3% solution of NaCl

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 1, 1962, 37, abstract 1G281 ("Poroshk. Metallurgiya", 1961, no. 1, 68 - 74 [English summary])

TEXT: Metallo-ceramic materials on Fe and Fe-C base, and with admixtures of Cu, P, Mn, Zn, Sn, Pb, S, and sulfides (the relative compactness of the materials constituted ~83 - 87%) were investigated with respect to their corrosion resistance, by means of a variable immersion cycle in 3% solution of NaCl in water. Metallo-ceramic bronze was also investigated for comparison. Fe with admixtures of 3% C in all cases has turned out to be more corrosion resistant than pure porous Fe. Admixtures of S, Mn, Pb, Sn, Zn (0.8% each) and 5% Cu deteriorate the corrosion resistance, and an addition of 0.8% P improves it. A study of the influence of the admixture concentration has demonstrated that they all act nonmonotonously. The corrosion resistance of metallo-ceramic materials



Card 1/2

Corrosion of iron-base...

S/137/62/000/001/051/237
A060/A101

is somewhat inferior to that of stannous bronzes and analogous to aluminum bronzes. The mechanism of the influence of the alloying admixtures upon the corrosion-resistance of Fe-C composition is discussed.

R. Andriyevskiy

[Abstracter's note: Complete translation]

Card 2/2

S/598/61/000/006/033/034
D217/D303

AUTHORS: Pugin, V.S. and Maurakh, M.A.

TITLE: Reactions between metal and mould in casting titanium

SOURCE: Akademiya nauk SSSR. Institut metallurgii. Titan i yego splavy. no. 6, 1961. Metallotermiya i elektro-khimiya titana, 251 - 259

TEXT: The reactions between Ti and various refractory oxides and materials, used in connection with casting of Ti, were studied. The following mould materials were tested: Be, ZrO₂; TiO₂, SiO₂, Al₂O₃ as well as titanium carbide, graphite ground to various degrees of fineness and colloidal graphite. Water glass, ethyl silicate, special phenolformaldehyde resin-base glue, aqueous solutions of colloidal graphite, zirconium nitrate, etc. were used as binding materials. Refractory paints were applied to model mixture moulds consisting of 50 % stearin and 50 % paraffin. The melting point of the model mixture was 50 - 55°. In order to assess the reaction between molten Ti and the mould materials, special moulds (in the

Card 1/2

Reactions between metal and mould ...

S/58/61/000/006/033/034
D217/D303

shape of small crucibles) made from different materials were placed inside a graphite ingot mould in such a way that four moulds could be teemed under identical conditions. Sticking of the mould mixture was investigated in relation to the composition of the latter and the temperature of the metal teemed, temperatures of 1790, 1800, 1850 and 1950° being used. It was found that the maximum hardness and depth of hard zone rise considerably with an increase in the pouring temperature. The authors endeavoured to develop a material more inert with respect to molten Ti, based on zirconium dioxide, by adding metallic Ti powder to the latter, thus ensuring a shortage of oxygen in ZrO₂. ZrO₂ + 15 at. % Ti with zirconium nitrate binder was found to be the most satisfactory material investigated, the optimum teeming temperature for Ti being 1760°. Good results were also obtained by using shell moulds made of ZrO₂ and Al₂O₃ on ethyl silicate. There are 2 figures, 1 table and 4 Soviet-bloc references.

Card 2/2

YEREMIN, V. P.; MAURAKH, M. A.; PUCIN, V. S.

Surface tension of a titanium alloy with tin, aluminum, and iron.
Izv. vys.ucheb.zav.; Chern.Met.7 no. 5:117-121 '64. (MIRA 17:5)

1. Moskovskiy institut stali i splavov.

L 57727-65 EWP(e)/EWT(m)/EWA(d)/T/EWP(t)/EWP(k)/EWP(z)/EWP(b)/EWA(c) Pf-4
 ACCESSION NR: AR5015170 MJW/JD/HW UR/0137/65/000/005/0038/0038

SOURCE: Ref. zh. Metallurgiya, Abs. 5G228

AUTHOR: Fedorchenko, I. M.; Pugin, V. S.; Solonin, S. M.

TITLE: High porosity metalloceramic materials for cleaning air and aggressive gases

CITED SOURCE: Tr. 7 Vses. nauchno-tekhn. konferentsii po poroshk. metallurgii. Yerevan, 1964, 167-171

TOPIC TAGS: filter material, powder metal, stainless steel, metal ceramic material, air filter, gas filter, furnace gas, porous metal

TRANSLATION: Technology has been developed for the manufacture, on an extrusion press, of large dimension tubular filters made of non-spherical powders of stainless steels Kh17N2, Kh30, Kh23N18, 1Kh18N9T, and OKh18N9, produced by the calcium hydride method. Food grade starch and waste products from the pulp and paper industry were used as plasticizers. The greatest amount of shrinkage in sintering is exhibited by steels of the ferrite type, and the clearest surface in finished articles was obtained by sintering in very dry hydrogen in a charge containing 5% titanium hydride. Hardening after sintering and homogenizing

Card 1/2

L 57727-65

ACCESSION NR: AR5015170

strengthen metalloceramic steels. Tubes were made of Kh17N2 steel powder, with a diameter of 100 mm, a length of up to 0.5 m, a wall thickness of 4-6 mm, and a porosity of 70%; these tubes were for cleaning blast furnace gas. Sintering of the tubes was done in purified hydrogen at 1200-1250° for 2-2.5 hrs, with an intermediate holding period of 1 hr at 600-800° for elimination of the plasticizer. The sintered products had σ_{ap} equal to 5-10 kg/mm², σ_{ap} equal to 0.5-1.5 kg/mm². [Translator's note; Two σ_{ap} in original.] The pores are uniformly distributed over the whole length of the tube, while the outer layers of the tube have a higher density than the middle layers. Such a pore distribution increases the efficiency of cleaning without lowering the penetrability of the filter. V. Kvin.

SUB CODE: MM

ENCL: 00

Card

2/2

YELVUTIN, V.P.; MAURAKH, M.A.; PUGIN, V.S.

Fluidity of binary titanium alloys with tin, aluminum, and
molybdenum. Izv. vys. ucheb. zav.; Chern. met. 7 no.7:159--
161 '64 (MIRA 17:8)

1. Moskovskiy institut stali i splavov.

FEDORCHENKO, I. M.; FUGIN, V. S.

"Porige pulvermetallurgische werkstoffe fur die gasreinigung."

report submitted for 3rd Intl Conf On Powder Metallurgy, Eisenach, E. Germany, 13-15 May 65

Kiev, UkSSR

L 32574-65 EWP(a)/EWT(m)/EWA(d)/T/EWP(t)/EWP(k)/EWP(b) Pf-4 MJW/JD/HW/

WB/JT

ACCESSION NR: AP5004437

S/0226/65/000/001/0020/0031

AUTHOR: Andriyevskiy, R.A.; Pugin, V.S.; Fedorchenko, I.M.; Teverovskiy, B.Z.

TITLE: Sintered porous materials from stainless steel

SOURCE: Poroshkovaya metallurgiya, no. 1, 1965, 20-31

TOPIC TAGS: stainless steel powder, porous stainless steel, air purification, stainless steel filter, sintered steel, powder metallurgy, extrusion, steel pipe, corrosion resistance/steel 1Kh18N9T, steel Kh17N2, steel OKh18N9, steel Kh23N18

ABSTRACT: The article reports on work done at the IPM AN USSR in the development of methods for preparing porous stainless steel and studying its properties and behavior under operational conditions. The experiments were carried out with nonspherical reduced stainless-steel powders. A method of preparing long tubes of high porosity by extruding such powders is described. The mechanical, electrical chemical, and corrosion properties of porous stainless steels 1Kh18N9T, Kh17N2, OKh18N9, and Kh23N18 were investigated. A technique is proposed for determining the corrosion resistance of porous materials in aggressive media. It was shown that porous stainless-steel filters operating in dust-containing gas streams insure a high degree of purification

Card 1/2

L 32674-65

ACCESSION NR: AP5004437

3
and can readily be regenerated by reverse blowing. A method of calculating the interval between reverse blowing operations is proposed. The possible areas of application of porous stainless steel made of nonspherical sintered powders are discussed. "The authors thank B.A. Borok, Bach. of Tech. Sciences, for his help in obtaining powders prepared at the TsNICherMet experiment station." Orig. art. has: 7 figures and 2 formulas.

ASSOCIATION: Institut problem materialovedeniya AN UkrSSR (Materials Science Institute, AN UkrSSR)

SUBMITTED: 24Dec63

ENCL: 00

SUB CODE: MM

NO REF SOV: 017

OTHER: 007

Card 2/2

FEDORCHENKO, I.M.; KOROBKO, M.I.; PUGIN, V.S.; MARTYNYUK, G.F.; KORNIYENKO,
P.A.; KISELEV, Yu.Ye.

Using ceramic metal filters for the purification of samples
of flue gas from open-hearth furnaces. Porosh. met. 5 no.10:
100-106 O '65. (MIRA 18:11)

1. Institut problem materialovedeniya AN UkrSSR.

ACC NR: AP6036907

(N)

SOURCE CODE: UR/0226/66/000/011/0089/0092

AUTHOR: Korniyenko, P. A.; Kostornov, A. G.; Pugin, V. S.

ORG: Institute of Problems of Material Science, AN UkrSSR (Institut problem materialovedeniya AN UkrSSR)

TITLE: Method of manufacturing large porous wall pipes

SOURCE: Poroshkovaya metallurgiya, no. 11, 1966, 89-92

TOPIC TAGS: stainless steel, pipe, porosity, metal joining, powder metal sintering

ABSTRACT: A process for joining large porous stainless-steel pipes into longer sections and for joining Kh17N2 cast stainless-steel flanges and end plates to pipe ends has been developed. Extruded (100 x 90 mm) pipes 400—450 mm long are joined into sections up to 2 m long by sintering using cementing paste containing carbonyl nickel powder and glycerin. The sintering is done at 1000C for 1 hr. A section up to 2 m long has a filtering area about 0.628 m² which can be used for filtration of aggressive gas media. Sintered joints have a porous structure with pores smaller than in sintered pipes. The joints ensure satisfactory rigidity and strength of sintered parts. Orig. art. has: 3 figures.

SUB CODE: 13/ SUBM DATE: 21Mar66/ ORIG REF: 004/

Card 1/1

PUGINA, L.I.

Experience in powder metallurgy. Avt. 1 trakt. prom. no. 2:43-44
F '57. (MIRA 10:3)

1. Stalingradskiy traktorny zavod.
(Powder metallurgy)

PUGINA, L.I.; ROMANOV, V.V.

Corrosion of iron-base ceramic metal materials in a 3-percent NaCl solution. Porosh. met. 1 no.1:68-74 Ja-F '61. (MIRA 15:5)

1. Institut metallurgii imeni A.A. Baykova AN SSSR.
(Ceramic metals--Corrosion)
(Sodium chloride)

S/081/62/000/002/053/107
B156/B101

AUTHORS: Pugina, L. I., Romanov, V. V.

TITLE: Corrosion of iron-base metal-powder substances in a 3 %
solution of NaCl

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 2, 1962, 325, abstract
21161 (Poroshk. metallurgiya, no. 1, 1961, 69-74)

TEXT: It has been established that, within specific limits governed by their effects on the density and strength of the substance, the greater the amounts of Cu, Sn, Zn, Pb, P, Mn, S and certain sulphurous metals added to Fe-graphite substances containing those elements, the lower the corrosion resistance (CR) of the substances in 3 % solution of NaCl. It is pointed out that substances with coarse plate-type structures have higher CR than substances with fine perlitic structures (almost granular). The CR of Fe-graphite substances are almost as high as those of the Br AM Mu 10-3-1.5 (Br AZh Mts 10-3-1.5) bronzes. [Abstracter's note: Complete translation.] ✓

Card -/1

PUGINA, L. I.

"Sulfidation of iron-graphite alloys."

Report presented at the Conference on Powder Metallurgy, Krakow,
Poland, 19-21 Sept 63.

PUGINA, L.I.; YURCHENKO, A.G.

Conditions of preparing and etching microsections of metal-graphite composition. Porosh.met. 5 no.11:83-86 N '65.
(MIRA 18:12)

1. Institut problem materialovedeniya AN UkrSSR. Submitted
March 20, 1965.

FEDORCHENKO, I. M.; FUGINA, L. I.

"Metall grafit-verbundwerkstoffe mit hohem grafitgehalt."

report submitted for 3rd Intl Conf on Powder Metallurgy, Eisenach, E. Germany, 13-15
May 1965.
Kiev, UKSSR.

L 10645-66 EWT(d)/EWP(e)/EWP(w)/EWT(m)/ETC/ENG(m)/EWP(v)/T/EWP(t)/EWP(k)/EWP(h)/EWP(b)

ACC NR: AP6002116 EWP(I) IJP(C) SOURCE CODE: UR/0369/65/001/006/0683/0687

AUTHOR: Fedorchenko, I. M.; Pugina, L. I.; Ponomarenko, N. Ye.

ORG: Institute of Materials Research, AN UkrSSR, Kiev (Institut problem material-ovedeniya, AN UkrSSR)

TITLE: Antifriction properties of materials acting as dry lubricants

SOURCE: Fiziko-khimicheskaya mekhanika materialov, v. 1, no. 6, 1965, 683-687

TOPIC TAGS: solid lubricant, friction coefficient, friction

ABSTRACT: The antifriction properties of powder lubricants have been studied in butt surface sliding friction at high velocities. The following materials were tested: graphite, mica, talcum, boron nitride, molybdenum disulfide, zinc and copper sulfides, and mixtures of certain sulfides with 30, 50, and 80% graphite. The experiments were conducted on MTT-1 equipment which makes it possible to attain butt sliding velocities (v) of up to 50 m/sec within a wide range of loads (P). It was shown that for v = 10 m/sec and P = 0.68 d/cm², ZnS, talcum, BN and mica layers undergo rapid destruction. Graphite and CuS form deposits up to 1 μ thick on the counterbody, but MoS₂ forms abrasive grooves. In comparative tests conducted with machine oil-lubricated powder specimens, v could be increased to 44 m/sec and P to 2--3.5 d/sec. The friction coefficient dropped with an increase of v and P. The wear and the friction coefficient of such dry lubricants as graphite or MoS₂ dropped with a decrease in

Card 1/2

L 10645-66

ACC NR: AP6002116

grain size. Addition of graphite lowered the wear and the friction coefficient of sulfides and improved their effectiveness at high sliding velocities. At friction velocities of up to 35 m/sec, MoS₂, graphite, and mixtures of graphite with MoS₂, ZnC or CuS can be used as components of cermets intended for service in dry friction or with limited lubrication. Orig. art. has: 4 fig. and 2 tables. [B0]

SUB CODE: 11/ SUBM DATE: 15Oct64/ ORIG REF: 004/ OTH REF: 011/ ATD PRESS: 4169

HW
Card 2/2

L 38225-66 EWT(m)/EWP(j)/T IJP(c) RM/WW/JXT/CZ
ACC NR: AP6009566

SOURCE CODE: UR/0236/65/000/003/0147/0154

39 B

AUTHOR: Machyulis, A. N.; Maciulis, A.; Mayauskas, I. S.; Majauskas, J.; Pugina, M.
I.; Pugina, M)

ORG: Institute of Power and Electrical Engineering, Academy of Sciences Lithuanian
SSR (Institut energetiki i Elektrotehniki Akademii nauk Litovskoy SSR)

TITLE: The effect of stabilizers and stabilization methods on the properties of
polymer materials. Part 2. Lacquer stabilization method

SOURCE: AN LitSSR. Trudy. Seriya B. Fiziko-matematicheskoye, khimicheskoye,
geologicheskoye i tekhnicheskoye nauki, no. 3, 1965, 147-154

TOPIC TAGS: polyamide, lacquer antioxidant, thermal aging

ABSTRACT: The purpose of this work was to investigate the thermal stability of
phenol-formaldehyde and polyamide resins to which thermal stabilizers were added.
It was established that lacquers containing stabilizers when painted on polymer ma-
terials protect the latter to a significant extent from rapid aging at elevated
temperatures. The strength of polyamides coated with lacquers on the basis of P-548

Card 1/2

L 38225-66

ACC NR: AP6009566

polyamide resin with the addition of equal amounts of potassium iodide and diphenylamine, diphenylguanidine, nickel oxide, mica, aluminum, copper and tungsten after thermal treatment in air for 24 hours at 433°K is two times greater than the strength of unstabilized polyamides. A great protective effect was observed when polymers were coated with film producing substances which are themselves inhibitors of oxidation such as lacquers on the basis of phenyl-formaldehyde and methylol polyamide resins. It was established that when lacquer containing a stabilizer is deposited during the thermal treatment process, more effective protection of the polymer is obtained against thermal oxidation than deposition of the same number of layers of lacquer prior to thermal treatment. It is concluded that the lacquer method of protection of polymers is quite effective. Orig. art. has: 7 tables.

SUB CODE: 11/ SUBM DATE: 25Feb65/ ORIG REF: 004/ OTH REF: 001

07/

Card 2/2

AK

MACHYULIS, A.N. [Maciulis, A.]; PUGINA, M.I.

Effect of stabilizers and methods of stabilization on the properties of polymeric materials. Part 1: Effect of some additions on the thermal stability of polyamides and polyethylene. Trudy AN Lit. SSR Ser. B. no.2:255-261 '65. (MIRA 19:2)

1. Institut energetiki i elektrotekhniki AN Litovskoy SSR. Submitted December 11, 1964.

PUGINA, M.I.; SHANTAROVICH, P.S.

Polymerization of cyclohexylacetylene. Vysokom. soed. 4
no.12:1784-1789 D '62. (MIRA 15:12)

1. Institut khimicheskoy fiziki AN SSSR.
(Cyclohexene) (Polymerization)

5.3400

77347
SOV/79-30-1-8/78

AUTHORS: Skvarchenko, V. R., Levina, R. Ya., Pugina, M. I.

TITLE: Aromatic Hydrocarbons. XII. Adducts of Alkadienes-1,3 With α -Naphthylacrylic Acid

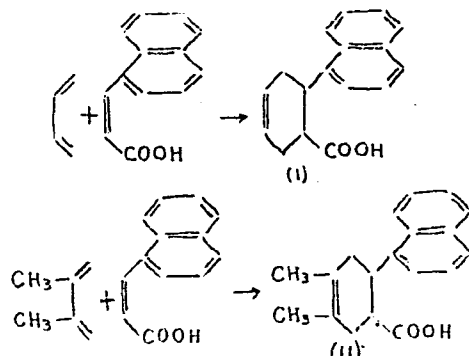
PERIODICAL: Zhurnal obshchey khimii, 1960, Vol 30, Nr 1, pp 46-50 (USSR)

ABSTRACT: Heating of α -naphthylacrylic acid with excess butadiene in benzene in the presence of hydroquinone, in an autoclave at 150-160° for 30 hr yields 2-(α -naphthyl)-1,2,3,6-tetrahydrobenzoic acid (I), (yield 27%), mp 113°. The same reaction with 2,3-dimethylbuta-1,3-diene at 180-190° for 14 hr yields 4,5-dimethyl-2-(α -naphthyl)-1,2,3,6-tetrahydrobenzoic acid (II), (yield 53%), mp 156-158°.

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Aromatic Hydrocarbons. XII. Adducts of
Alkadienes-1,3 With α -Naphthylacrylic
Acid

77347
SOV/79-30-1-8/78



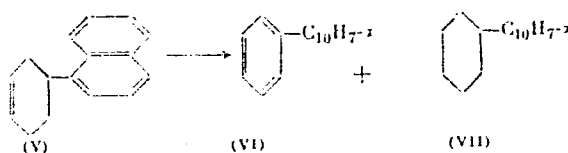
The 2-(α -naphthyl)-1,2,3,6-tetrahydrobenzoic acid in
reaction with P_2O_5 eliminates CO_2 and yields (61%)
 α -(Δ^3 -cyclohexenyl)-naphthalene, mp 72° ; i.e.,
2-(α -naphthyl)-1,2,3,6-tetrahydrobenzoic acid behaves
quite differently from the analogous structure, 2-
phenyl-1,2,3,6-tetrahydrobenzoic acid (adduct of

Card 2/4

Aromatic Hydrocarbons. XII. Adducts of
Alkadienes-1,3 With α -Naphthylacrylic
Acid

77347
SOV/79-30-1-8/78

butadiene with cinnamic acid) which in reaction with P_2O_5 eliminates water and yields fluorene. The obtained α -(Δ^3 -cyclohexenyl)-naphthalene was identified by conversion into a mixture of α -phenylnaphthalene (VI) and α -cyclohexylnaphthalene (VII) (by heating with Se).



The authors wish to thank L. A. Kazitsina for the absorption spectra. There is 1 table; 1 figure; and 5 references, 2 Soviet, 2 U.K., 1 German. The U.K. references are: Cook, J., Dansi, A., Hewett, C., et al., J. Chem. Soc., 1935, 1319; Cook, J., Hawett, C.,

Card 3/4

Aromatic Hydrocarbons. XII. Adducts of
Alkadienes-1,3 With α -Naphthylacrylic
Acid

77347
SOV/79-30-1-3/78

Lawrence, C., J. Chem. Soc., 1936, 71.

ASSOCIATION: Moscow State University (Moskovskiy gosudarstvennyy
universitet)

SUBMITTED: December 19, 1958

Card 4/4

L 32995-65 EPF(c)/EPF(n)-2/EPR/EPA(s)-2/ENG(v)/EWA(h)/EWP(j)/EWT(m)/
EPA(bb)-2/T/EWA(1) Pc-4/Pe-5/Pr-4/Ps-4/Pt-10/Pu-4/Peb JAJ/RM/WW

ACCESSION NR: AP5007417

S/0286/65/000/004/0059/0059

AUTHOR: Machyulis, A. N.; Mayauskas, I. S.; Pugina, M. I.

TITLE: A method for stabilizing capron. Class 39, No. 168423

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 4, 1965, 59

TOPIC TAGS: capron, thermal stability, stabilization

ABSTRACT: This Author's Certificate introduces a method for stabilizing capron which is used at high temperatures. Heterocyclic compounds which contain nitrogen or the amines of these compounds, e.g. 2-aminopyridine (0.1%) are added to the capron as stabilizers.

ASSOCIATION: none

SUBMITTED: 08May63

ENCL: 00

SUB CODE: MT, GC

NO REF SOV: 000

OTHER: 000

Card 1/1

L 7882-66 EWT(m)/EWP(j)/T RM

ACC NR: AP5025014

SOURCE CODE: UR/0286/65/000/016/0079/0079

AUTHORS: ⁴⁴⁵Baltrushis, R. S.; ⁴⁴⁵Machyulis, A. N.; ⁴⁴⁵Beresnevichyus, Z. G.; ⁴⁴⁵Pugina, M. I. ⁴⁴⁵

ORG: none

TITLE: Method for thermostabilization of polycaprolactam. ¹Class 39, No. 173922 ¹⁶

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 16, 1965, 79

TOPIC TAGS: ⁴⁴⁵polymer, ⁴⁴⁵capron, polycaprolactam, thermostabilization, ⁴⁴⁵polymer

^{physical chemistry}
ABSTRACT: This Author Certificate presents a method for thermostabilization of polycaprolactam by the addition of stabilizer to the latter. To increase the variety of stabilizers, ¹⁶pyrimidine derivatives, e.g., 3-(2-naphtyl-2-thiodihydro-uracyl) or 3-(3-pyridyl)-dihydrouracyl are used as stabilizers.

SUB CODE: 07/

SUBM DATE: 03Sep64

^{nw}
Card 1/1

UDC: 678.675 678.048.2
²

L 11540-66 EWT(m)/EWP(j) RM

ACC NR: AP6000679

SOURCE CODE: UR/0236/65/000/002/0255/0261

AUTHOR: ^{44,55} Machyulis, A. N. (Maciulis, A.); ^{44,55} Pugina, M. I. (Pugina, M.) ^{55 B}

ORG: Institute for Power and Electrical Engineering of Academy of Sciences, Lithuanian SSR (Institut energetiki i elektrotechniki Akademii nauk Litovskoy SSR)

TITLE: ¹⁵ Effect of stabilizers and stabilization methods on properties of polymeric materials. 1. Influence of certain additives on thermal stability in ¹⁵ polyamides and polyethylene ^{15,44,55}

SOURCE: AN LitSSR. Trudy. Seriya B. Fiziko-matematicheskkiye, khimicheskkiye, geologicheskkiye i tekhnicheskkiye nauki, no. 2, 1965, 255-261

TOPIC TAGS: polyamide, polyethylene, tensile strength, elongation, solid mechanical property, polymer

ABSTRACT: The effect of diphenylamine, potassium iodide and a mixture of equal weights of both (additive DK-1) ¹⁵ on tensile strength (σ_v) and relative elongation (ϵ) of polyamides and polyethylene during thermal aging was investigated. Commercial polyamide and polyethylene samples were dried at 353°K (down to 0.2% water) and mechanically mixed with 0.1-1% additive and then pressed. The pressed samples were thermally treated (393-433°K) in air in a thermostat for periods ranging up to 240 hours. Best mechanical properties of polyamide and polyethylene samples resulted from the addition

Card 1/3

L 11540-66

ACC NR: AP6000679

of 1% of DK-1. It was found that the introduction of thermal stability additives into a varnish coating of a polymer has the same effect as the introduction of such additives directly into the polymer. DK-1 additive was found to cause microdefects on the polyethylene surface. The dependence of tensile strength σ and relative elongation ϵ of caprone upon duration (t) of thermal treatment at 433°K is shown in fig. 1. The dependence of tensile strength σ and relative elongation ϵ of polyethylene upon duration (t) of thermal treatment at 393°K is shown in fig. 2.

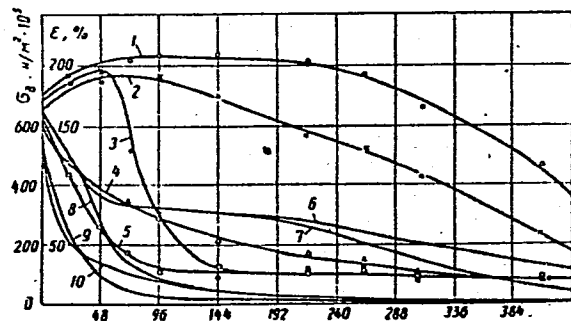


Fig. 1. Tensile strength σ of caprone with: 1--1% DK-1; 2--1% KJ; 3--1% di-phenylamine; 4--0.1% DK-1; 5--pure caprone. Relative elongation ϵ of caprone with: 6--1% DK-1; 7--1% KI; 8--1% di-phenylamine; 9--pure caprone; 10--0.1% DK-1.

Card 2/3

L 11540-66

ACC NR: AP6000679

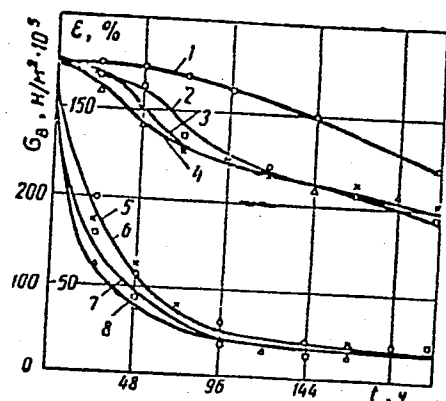


Fig. 2. Tensile strength σ of polyethylene with: 1--1% DK-1; 2--1% KJ; 3--0.1% DK-1; 4--pure polyethylene. Relative elongation ϵ of polyethylene with: 5--1% DK-1; 6--0.1% DK-1; 7--1% KJ; 8--pure polyethylene.

Orig. art. has: 5 figures, 1 table.

SUB CODE: 11/

SUBM DATE: 11Dec64/

ORIG REF: 014/

OTH REF: 000

HW
Card 3/3

L 20405-66 EWP(m)/EWP(j)/T/ETC(m)-6 WW/RM

ACC NR: AP6008401

(A)

SOURCE CODE: UR/0374/66/000/001/0060/0066

79
B

AUTHOR: Machyulis, A. N.; Pugina, M. I.; Zhechyus, A. A.; Kuchinskas, V. K.; Stasyunas, A. P.

ORG: Institute of Power Engineering and Electronics, AN LitSSR, Kaunas (Institut energetiki i elektroniki AN Litovskoy SSR)

TITLE: The effect of certain additions and surrounding media on the static and fatigue strength of polyamides

15

SOURCE: Mekhanika polimerov, no. 1, 1966, 60-66

TOPIC TAGS: polyamide, lactam, fatigue strength, thermal effect, thermal stability, rupture strength, static pressure, polymer

ABSTRACT: The effect of various stabilizers and of the surrounding medium on the static strength of polycaprolactam during thermal treatment was investigated. It was shown that the dynamic strength depends the method by which the stabilizers are introduced. The stabilizing medium and the varnish, containing the thermo-stabilizer covering the polyamides, are found to delay the thermooxidation and cause a decrease in strength. It was observed that with thermal treatment the decrease in the strength of polyamides results from the inner stresses and the microdefects appearing with the rupture of molecular chains. Orig. art. has: 5 figures and 2 tables. [Based on authors' abstract.]

[NT]

SUB CODE: 20,07 SUBM DATE: 30Jul65/ ORIG REF: 009/ OTH REF: 004/

Card 1/1 BK

PUGINA, N.I.

ZHUKOVA, A.P., rukovoditel'; POPOV, I.A., rukovoditel'; RYKOVA, Z.L., rukovoditel'; ARKHIPOV, N.A., starshiy nauchnyy sotrudnik; DZHMISHELEYSHVILI, Sh.P., starshiy nauchnyy sotrudnik; DMITRIYEV, G.V., starshiy nauchnyy sotrudnik; ZHURAVKOV, M.V., starshiy nauchnyy sotrudnik; ISTOMIN, P.S., starshiy nauchnyy sotrudnik; KURBATOV, A.K., starshiy nauchnyy sotrudnik; METLINA, T.I., starshiy nauchnyy sotrudnik; ~~PUGINA, N.I.~~ starshiy nauchnyy sotrudnik; BOYKOV, M.A., otvetstvennyy red.; BEL'KE, G.V., otvetstvennyy red.; KLEYMENOV, F.N., otvetstvennyy red.; SMOLDYREV, A.Ye., otvetstvennyy red.; SHARAYEV, A.N., otvetstvennyy red.; BUTAZOV, V.V., tekhn.red.; SABBITOV, A., tekhn.red.

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(Coal mines and mining)

BOREKOV, Y.I., assistant; LIKHNITSKAYA, I.I., docent; PUGINA, N.G., assistant

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... .., doktor tekhnicheskikh nauk; PUGINA, G.V., inzh.; GETMANSKIY, I.K., inzh.

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2. Khimicheskii gosudarstvennyi institut sinteticheskikh
reagentov i moyushchikh sredstv (for Getmanskii).
- (Iron ores)
- (Flotation)

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nauchnyy sotrudnik; Prinimali uchastiye: YAKOVLEVA, V.F.,
laborant; KUKOVITSKAYA, S.G., laborant

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PUGINA, O.V., starshiy nauchnyy sotrudnik

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1. Yuzhnyy gornoobogatitel'nyy kombinat.

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